

# Killer Whales: Our Evolving Perspective

**How perceptions and knowledge of this species have changed since the 1960s**

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**Killer whales got their name and fierce reputation from attacks on large whales**



**Killer whales attacking a blue whale**

**In the Pacific Northwest,  
Native Americans' reverence  
for this species was reflected  
in their art**

**However, some European  
settlers who were salmon  
fishermen viewed them as  
competitors**



# **Two events –**

**One in the mid 1960s**

**The others in the early 1970s**

**would set in motion activities that  
changed our perception and  
understanding of this species**



# **The first event was the captive display of killer whales**

- **In 1964 a young killer whale, Moby Doll, was captured for a display model for the Vancouver Aquarium**
- **In the following year an adult male was accidentally captured in Namu, BC, and brought to Seattle**

**In both cases the behavior of these whales dispelled the notion that they were threats to humans**



# **The amazing association between Namu and owner Ted Griffin spawned a live-capture fishery in the Pacific Northwest for aquariums worldwide**



**Between 1967 and 1970 approximately 48 killer whales were removed from the trans-boundary waters of British Columbia and Washington State**

**The large number of whales removed lead to concern about the impact of these captures on the killer whale population**



**This concern resulted in the second significant event in local killer whale history**

**In 1971, Mike Bigg proposed using a revolutionary technique for estimating the local killer whale population**



**He would census the whales by identifying individuals based on fin nicks, scars, and pigment patterns using photographs**



**In 1976, a similar study by Ken Balcomb, and supported by the National Marine Fisheries Service, began in the San Juan Islands**



**The use of photographs to identify individuals documented that there were far fewer whales than had been previously suggested**

**– only about 80 whales in local area**

**This technique also allowed studies to be conducted on several other aspects of this species biology**





**In only a few years the scientific literature expanded significantly with the details of this species' life history**



**Bigg noted that although similar in appearance there were two types of killer whales**

**“fish eaters”**

**which were  
“Resident”**



**photo by Ken Balcomb**

**and “marine mammal eaters”  
which were “Transient”**



**photo by Robin Baird**

# Numerous details of their complex social structure also came to light



**Groups were composed of social units that were stable over time – pods**



**Pods were matriarchal**  
**- both males and females**  
**associated with their**  
**mother throughout her life**



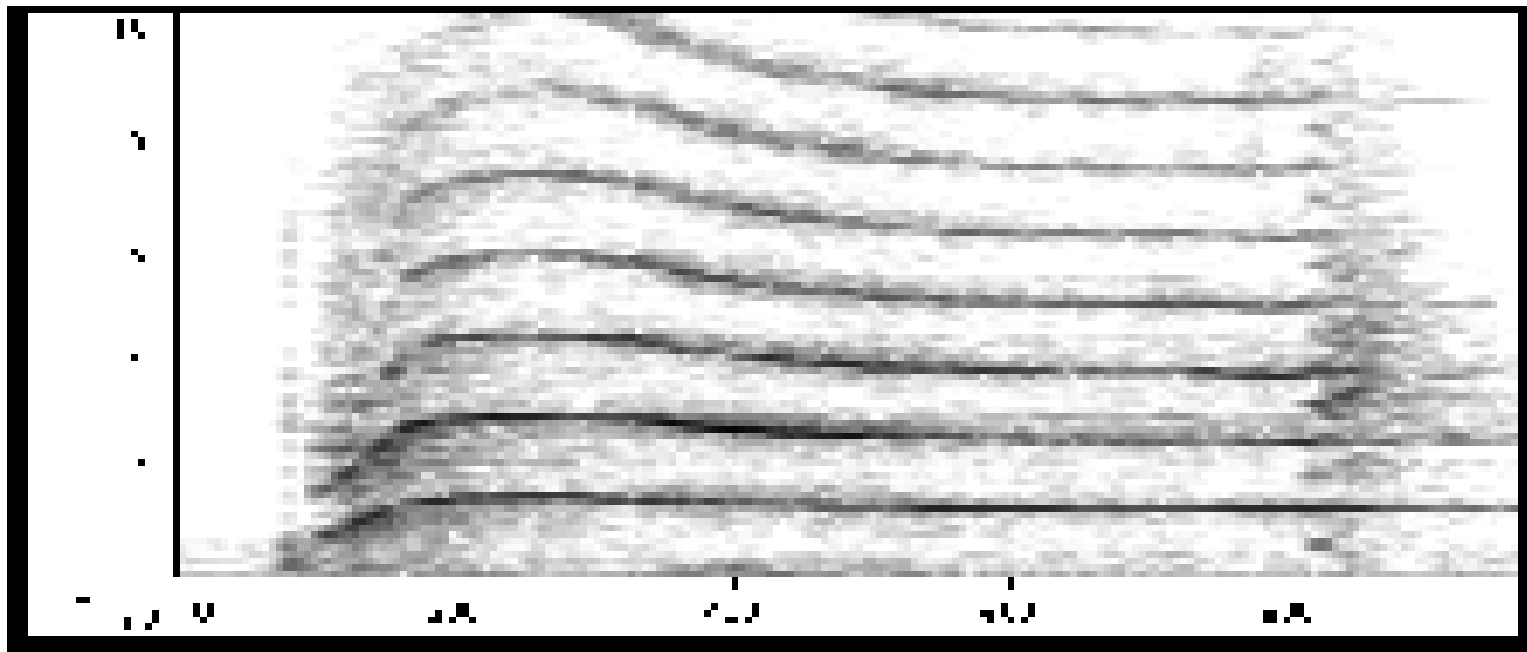
**Pods that were occasionally observed associating with each other were determined to be part of the same community**

**Two “fish-eating” communities were identified in British Columbia and Washington State**

- 1) Northern residents**
- 2) Southern residents**
  - J, K, and L pods**



**In the early 1980s John Ford determined that pods within these communities shared similar vocalization patterns - dialects**



**Audiogram of a discrete call**

**In the mid-1980s John Calambokidis determined that southern resident killer whales had high pollutant levels**

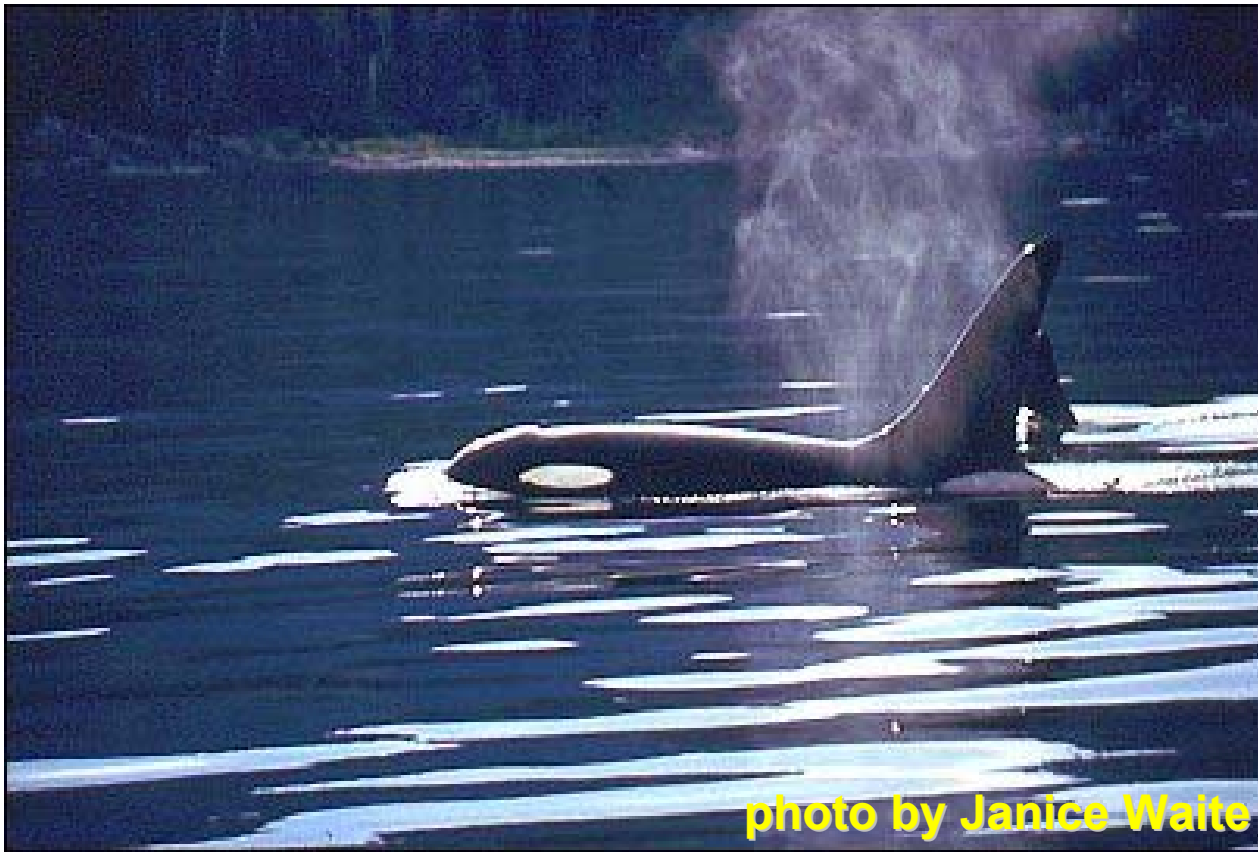


photo by Janice Waite

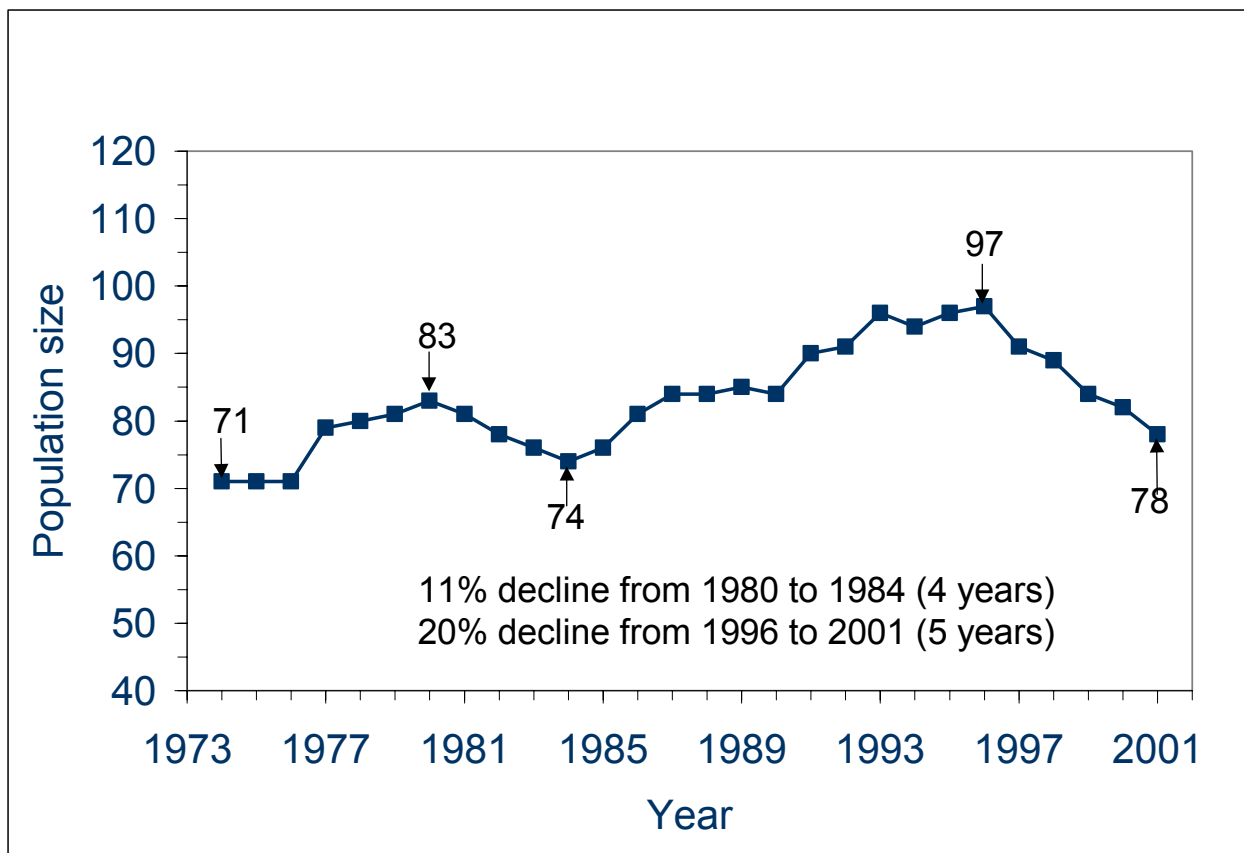


**By the mid-1990s two other factors that had changed significantly raised concerns about potential impacts on this population**

**1) Decline in wild salmon stocks**

**2) A large increase in vessel traffic**



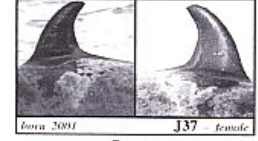
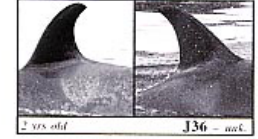
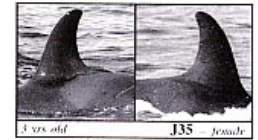
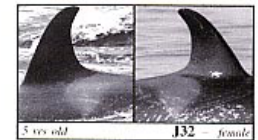
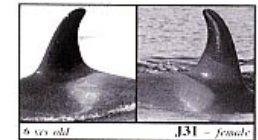
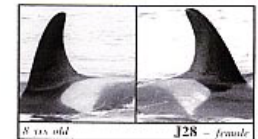
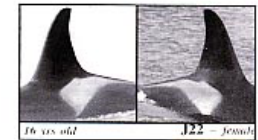
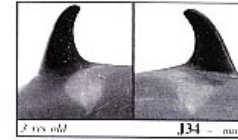
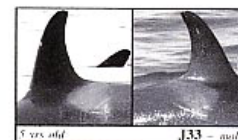
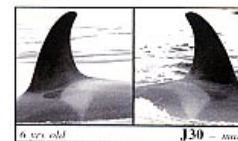
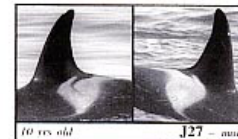
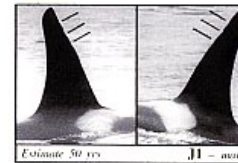
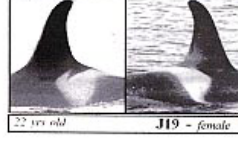
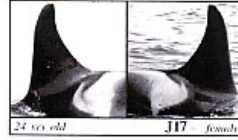
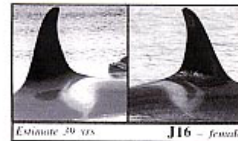
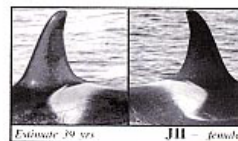
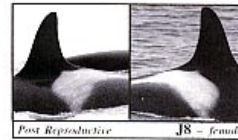
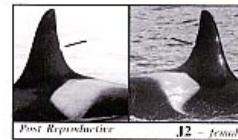


**A decline that began in 1995 continued through 2001 - 20%**

**L pod has had the largest decline**



**Since 1976,  
The Center for  
Whale Research  
has annually  
monitored the  
southern resident  
killer population**



Note: These whales attain puberty in their teens. Any whale born more recently than 1990 is not yet mature, and will be noticeably smaller in size. Reproductive senescence for females commences around age 40. Females give birth to a single calf at five year intervals on average.

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**While the birth of 5 calves in 2002 is encouraging, concerns remain about the long-term viability of the southern resident killer whale population**



**Despite the large amount of knowledge about southern resident killer whales, there is still much that is not known about the factors**

**that may be adversely affecting this population**

